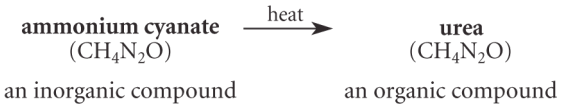
ERRATA

Organic Chemistry, 5th Edition, by Marc Loudon
Date of this release: March 16, 2012
(Items marked with (*) were corrected in the second printing.
Items marked with (†) were corrected in the third printing.)

How do I know what printing I have? Look at the reverse side of the title page, where you will see all sorts of publication information. On the last line, you will see a series of digits. These digits will end with the number of your printing. Thus, 10 9 8 7 6 5 4 3 2 1 is a first printing; 10 9 8 7 6 5 4 3 2 is a second printing; and 10 9 8 7 6 5 4 3 is a third printing.

Chapter 1

†p. 2 In Eq 1.1, the formulas of both the reactant and product should be CH_4N_2O.



*p. 15 In line 7 in the section on Bond Angle, the italicized word *electron* should be plural, i.e., *electrons.*

*p. 43 In Problem 1.32, the bond angle of H_2O should be 104.5°.

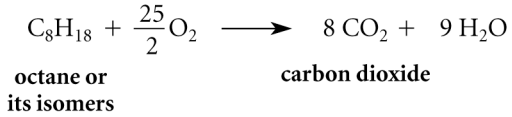
†p. 44 In Problem 1.35(a), rule 2, replace m_l with l.

*p. 44 In the last line of Problem 1.42, the word "dipolemoment" should be two words, i.e., "dipole moment."

Chapter 2

*p. 67 The second word of Section 2.5 should be plural, to read: "Some alkanes …"

*p. 76 The oxygens in Eq. 2.2 should be balanced. The equation should read:



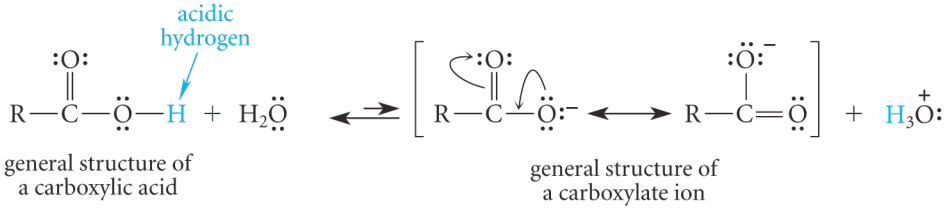
*p. 77 In Problem 2.21, change "in" to "is" to read: "gasoline is burned."

Chapter 3

p. 106 In Study Problem 3.6, the cross-reference should be to Eq. 3.23, not 3.22.

*p. 107 The second column header of Table 3.2 should be kcal mol^{-1}, not kJ mol^{-1}.

†p. 111 In Eq. 3.34, the second structure in the brackets has an extra electron pair on the carbonyl oxygen. This equation should be



*p. 117 The number of Problem 3.27 should be boldface color. That is, the solution to this problem is in the Study Guide Solutions Manual.

†p. 119 In Problem 3.32, the part designation (a) should be boldface blue, because the answer to this part is found in the Study Guide and Solutions Manual.

p. 121 In the first line of Problem 3.48(b), change the word "base" to "acid," to read: " …whose conjugate acid …"

Chapter 4

*p. 131 In Problem 4.1, replace the word "stereo" with "stereoisomers," to read: "… can exist as double-bond stereoisomers?"

p. 138 In Study Problem 4.7, fifth line under the structures, the groups in parentheses should read (C,C,H).

*p. 138 In the second line of last paragraph of Study Problem 4.7, the name should be (2*E*,4*Z*)-3-isopropyl-2,4-hexadiene (not pentadiene).

*p. 139 In Eq. 4.7, delete one of the "2*C*" terms in the numerator; the numerator should be $2C + 2 + N - H$.

*p. 140 In the second line below the first display in Sec. 4.4, delete the word "alkenes" after the words "molecular weight," to read: "The alkenes of lower molecular weight are gases…"

*p. 141 In the first paragraph of Sec. 4.5, second-to-last line, insert a space so that "anamount" is changed to "an amount."

†p. 143 In Problem 4.13a, the value –4.14 should be –4.13 kcal mol^{-1}.

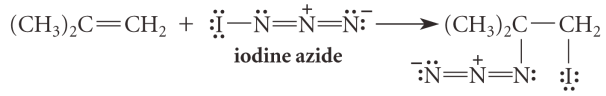
*p. 143 In Problem 4.15, the callout should be to Further Exploration 4.2, not 4.1.

p. 170 In the paragraph below Eq. 4.42c, fourth line, the first "is" should be "in," to read: " … base in Eq. 4.42c is water. "

†p. 173 In the third line of the first bulleted point in the left column, the word "stereoisomers" is misspelled.

Chapter 5

p.181 In Problem 5.1a, there should be a negative charge on both terminal nitrogens, i.e.,



p. 183 In the second line of Section B, the cross-reference should be to Eq. 5.13, not 5.13c.

p. 187 In the last paragraph, the cross-reference should be to Eq. 5.10, not 5.10a (p. 182).

*p. 222 In Problem 5.41, add the phrase "to alkenes," so that the opening sentence reads: "Free-radical addition of thiols (molecules with the general structure RSH) to alkenes is a well-known …" In Problem 5.41(a), the ΔH values of ethanethiol and ·SH are standard heats of formation,—that is, the symbol used should be $\Delta H_f°$. (For guidance, match the symbol in the colored problem box on the top of p. 147.)

p. 222 Also in Problem 5.41(a), the $\Delta H_f°$ of ethanethiol should be –46.2 kJ mol^{-1}.

*p. 225 In Problem 5.52, the formula of compound *B* is wrong; it should be C_6H_{12} instead of C_4H_8.

Chapter 6

p. 256 In the caption to Figure 6.17, the last word, "enantiomers," is misspelled.

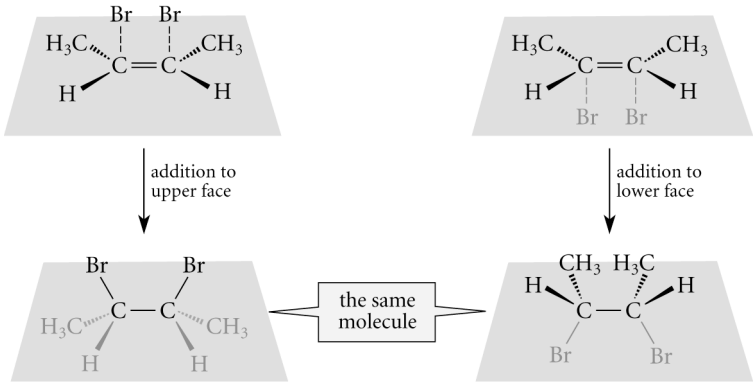
p. 264 On line 7 of Problem 6.32, the last "it" should be "is," to read, " … except that it is …"

Chapter 7

*p. 280 In Problem 7.2, second line, change 7.3 kJ mol^{-1} to 7.4 kJ mol^{-1} for consistency with the rest of the chapter.

p. 287 In line 13, change "most" to "must," to read: " … one of two things must be true …"

*p. 309 In Eq. 7.46, the second structure on the left, change a wedge to a dashed wedge. The left side of the equation should then be



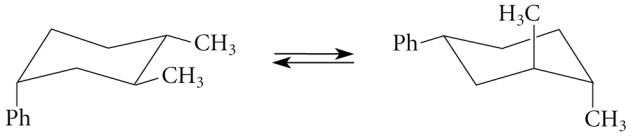
***meso*-2,3-dibromobutane**

*p. 310 In the margin callout to Study Guide Link 7.4, there are two misspellings. This callout should read, "Stereoselective and Stereospecific Reactions."

*p. 314 Problem 7.31(a) should be changed to request a single compound rather than a single diastereomer, to read: "… oxymercuration–reduction give (a) a single compound; (b) two diastereomers; …"

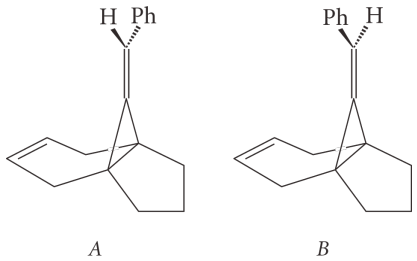
*p. 317 In Problem 7.41(a), change the word "trimethylcyclohexane" to "tetramethylcyclohexane."

*p. 318 In the second line of Problem 7.51, make the word "group" plural, to read: "… addition of two —OH groups …"



p. 318 The reactant in Problem 7.53(b) should be 3-hexene, not 3-pentene (which is not a correct name in any case).

†p. 322 In Problem 7.68(a), the two structures should be different. The correct structures are as follows:



A *B*

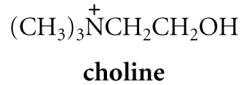
Chapter 8

p. 323 The last word of text on p. 323 is "antifreeze."

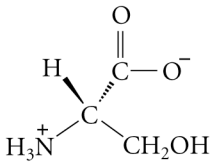
†p. 343 In Problem 8.17, the problem number should not be boldface color. The part number (a) *should* be boldface color. That is, the solution to only part (a) is in the Study Guide and Solutions Manual.

p. 345 In the second line, add the verb "are" to read: " … as a result, these ions are easier to separate …"

*p. 348 The structure of choline in the display near the top of the page should have three rather than four methyl groups—that is, $(CH_3)_3N$ …

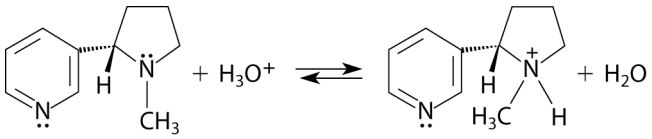


choline



serine

*p. 351 In Eq. 8.8, the structure of nicotine and its conjugate acid have an incorrect attachment position to the pyridine ring. The equation should read as follows:



nicotine
conjugate base
(neutral)

nicotine
conjugate acid
(cationic)

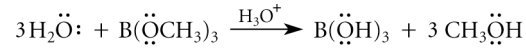
*p. 359 In the margin callout for Further Exploration 8.2, the word "Salvation" should be changed to "Solvation".

*p. 363 In point 2 of the three numbered points just below the middle of the page, R**:** should have a negative charge—that is, R**:**$^-$.

*p. 364 The two problems on this page have incorrect numbers; they should be numbered 8.29 and 8.30 instead of 8.23 and 8.24.

†p. 369 In line 7 of the sidebar, cellulose is the most abundant *organic* compound on the face of the earth. Insert the word "organic" before the word "compound."

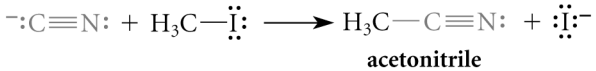
*p. 376 The problem number should be light face black, because the solution for only part (a) is in the Study Guide Solutions Manual. In Problem 8.62(b), there is an incorrect subscript on the structure of trimethyl borate; its structure should be $B(OCH_3)_3$.



trimethyl borate **boric acid**

Chapter 9

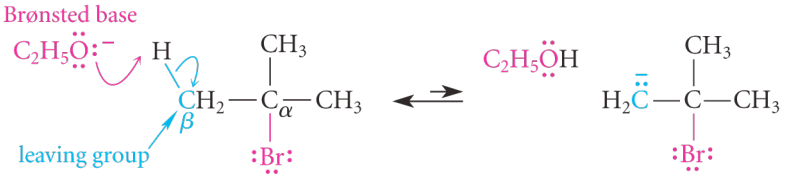
*p. 381 In Eq. 9.7, iodide ion (I^-) should be added to the products.



acetonitrile

†p. 385 The last entry for rate constant (left column) in Table 9.2 should be 6.2×10^{12} sec^{-1}.

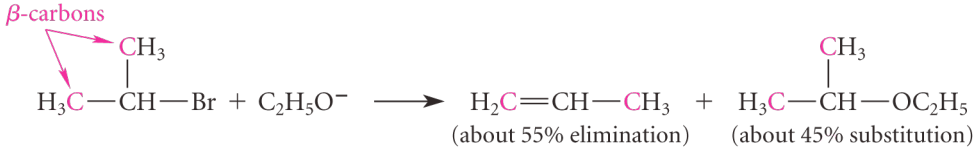
†p. 401 The product in Eq. 9.36a is incorrect. The equation should be as follows:



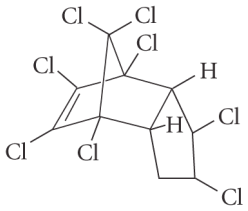
*p. 402 In Problem 9.16, 4th line, change "his" to "this," to read, " … this anion …"

*p. 406 In Problem 9.21, the reference should be to Eq. 9.40a. Also, change "*anit*" to "*anti*."

†p. 408 In Eq. 9.45(a), the elimination product has a color error; the center carbon should be black and the methyl carbon should be red:



†p. 430 In Problem 9.44, a chlorine is missing in the structure of chlordane. The structure should be as follows:



principal component of chlordane

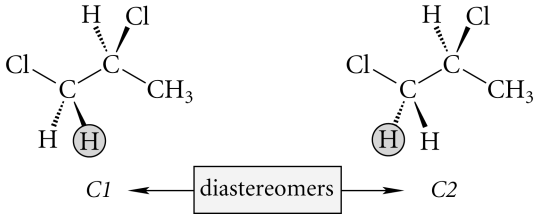
*p. 433 In the hint for Problem 9.61, the word "flip" should be replaced by "interconversion," to read "chair interconversion".

*p. 433 In Fig. P9.63, the reactions should be numbered (1) and (2) so as not to confuse them with the part numbers of Problem 9.63. In part (b) of the problem, then, the reaction number in the text of the problem should be (2) instead of (b), to read: "(b) Reaction (2) shows first-order kinetics. … "

Chapter 10

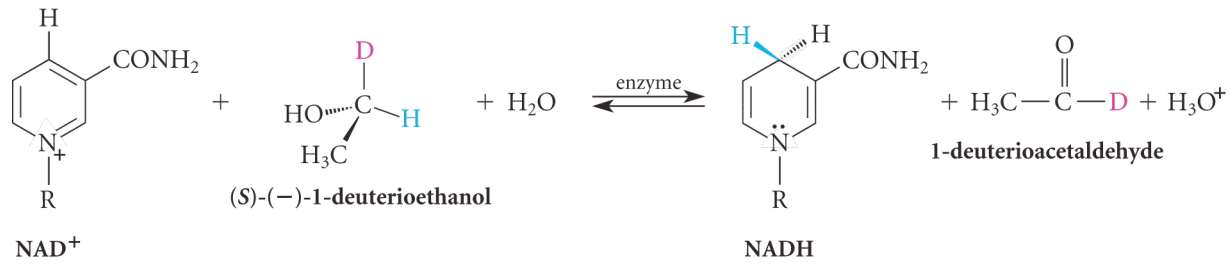
p. 458 In Table 10.1, in the first structure under "Tertiary Carbon," the CH_2R group should be instead just an R group.

*p. 467 On the display at the top of the page, in the structure on the right, the dashed hydrogen rather than the wedged hydrogen should be circled.



†p. 470 In the caption of the topmost structure of ethanol, delete the second line ("Fischer projection").

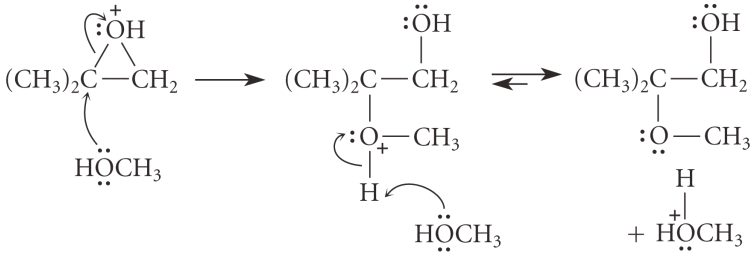
p. 470 In Eq. 10.52, the colors of the H and D in the products should be reversed:



*p. 481 In Figure P10.61, the problem parts numbers (a) and (c) should be in boldface color; that is, their answers appear in the Study Guide–Solutions Manual. In the same problem, there are two parts numbered (c). The second of these (the last equation on the page) should be numbered (d) and should *not* be boldface color.

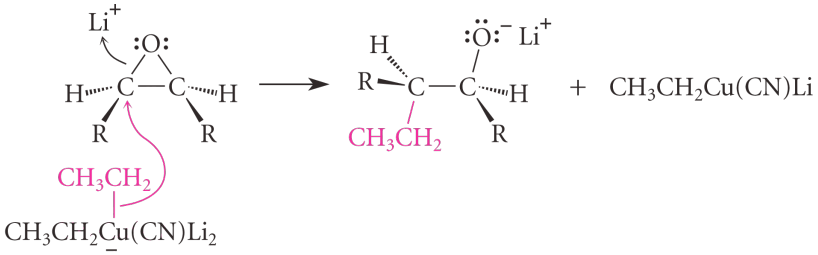
Chapter 11

†p. 498 In Eq. 11.33c, the protonated epoxide should have a positive charge.



†p. 502 In Eq. 11.44, one hydrogen of he ethane by-product should also be blue (CH_3CH_3) to reflect the fact that it originates from the H_3O^+ in the second step of the reaction.

†p. 502 In Eq. 11.45, there should be two lithiums in the organometallic reagent.

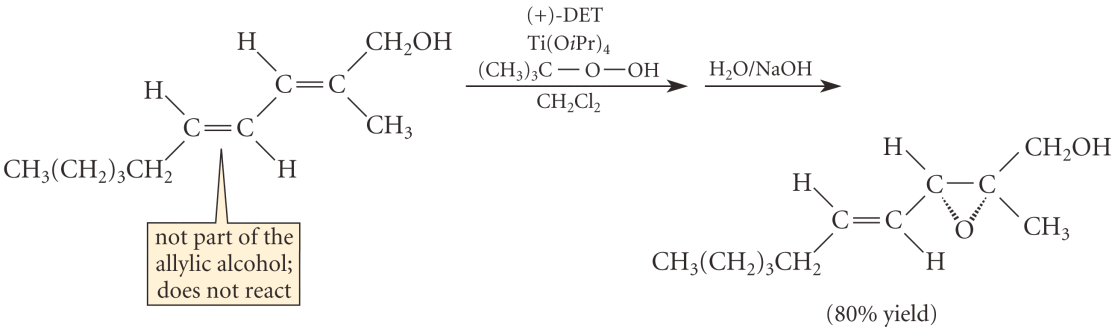


†p. 503 Problem 11.21(c) should read: "Is there another epoxide and higher-order cuprate that could be used to prepare the alcohol product of Eq. 11.44? If so, what are they? If not, why not?"

*p. 516 In Problem 11.34(a), change "NaOH" to "$^-$OH" to read: " … with $^-$OH as the nucleophile."

*p. 516 In Problem 11.34(b), at the end of the second line, change "water" to "$^-$OH" to read: " … which then reacts with $^-$OH."

p. 524 In Eq. 11.76. a methyl group is missing in the product. The corrected equation is



*p. 528 In Problem 11.45(d), the "+" on H_3O+ should be a superscript charge—that is, H_3O^+.

*p. 528 In Problem 11.45(j), omit the first step (which would result in no reaction), so that the problem reads: "(*R*)-3-Methyl-1-bromopentane with Mg in ether, then with …". Note also that the "Methyl" is capitalized.

*p. 528 In Problem 11.46, between parts (a) and (b), there are two tiny symbols that do not belong. (They look like small reaction flasks.)

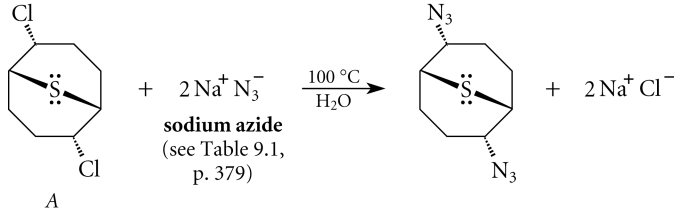
*p. 528 In Problem 11.46(k), the starting material is the product of part (f), not part (e). In addition, the part number (k) should be light-face black, not bold-face color, because the answer is not in the solutions manual.

*p. 528 In Problem 11.46(l), the starting material is the product of part (k), not part (i). In addition, the part number (l) should be light-face black, not bold-face color, because the answer is not in the solutions manual.

*p. 530 In Problem 11.59, the prefix for compound (3) should be (+), not (±), so that the compound is (+)-1,4-dimethoxy-2,3-butanediol.

*p. 532 Problem 11.69, part (d), should be labeled (c). There is no part (d).

*p. 535 In Figure P11.76, the reference should be to Table 9.1 on p. 379.



Chapter 12

*p. 562 The reference to Table 12.2 seven lines from the bottom should be to Table 12.3.

*p. 573 In Problem 12.28(b), the bond energy of the carbon–carbon triple bond should be 558 kJ mol^{-1} (133 kcal mol^{-1}), as in Table 5.3, p. 213.

Chapter 13

†p. 584 In Eq. 13.5b and in the sentence above it, $h/2\pi$ should be replaced by $\gamma_H/2\pi$ (three occurrences).

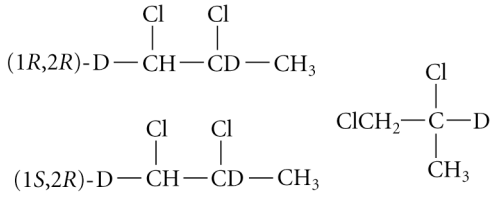
*p. 586 In Eq. 13.1, the parenthetical expression in the denominator of the equation should read "(in MHz)"; that is, a z is missing.

†p. 591 In the display in part (c) of Study Problem 13.1, the configuration of the compound on the right is labeled incorrectly; it should be (2*S*,3*R*).

*p. 612 The compound in Problem 13.23(a) should be 3-methyl-2-buten-1-ol.

p. 617 In the second line below the ethanol structure near the middle of the page, change "δ-proton resonance" to "α-proton resonance."

*p. 638 In Problem 13.43c, in the diastereomeric structures, replace the hydrogen on the rightmost CH by by deuterium. The corrected structures are as follows.



Chapter 14

†p. 668 In the first line of Sec. 14.9, the page reference for Problems 14.24 and 14.25 should be to p. 669.

Chapter 15

†p. 707 In Eq. 15.26, the rightmost methyl group in the structure over the caption "(mostly)" is missing a hydrogen.

†p. 725 In the last line of the solution to Study Problem 16.5(e), replace the last "p electrons" with "π electrons".

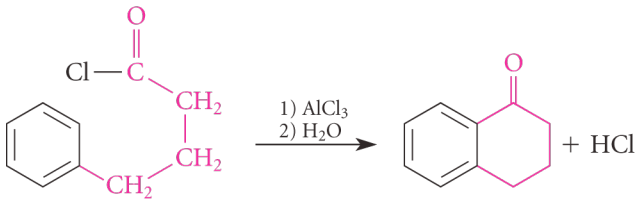
†p. 735 The part number (c) of Problem 15.58 (which begins on the previous page) should not be boldface color. It is not answered in the Study Guide and Solutions Manual.

†p. 736 The problem number for Problem 15.70 should be boldface color.

†p. 738 In Figure P15.70, the part number (a) should be light face black rather than boldface color.

Chapter 16

†p. 761 In Eq. 16.26, an "O" is missing on the double bond of the first structure.



4-phenylbutanoyl chloride

α-tetralone (74–91% yield)

†p. 763 In Problem 16.21(a), the cross-reference to the structure of acetyl chloride should be Eq. 16.22 (†p. 759).

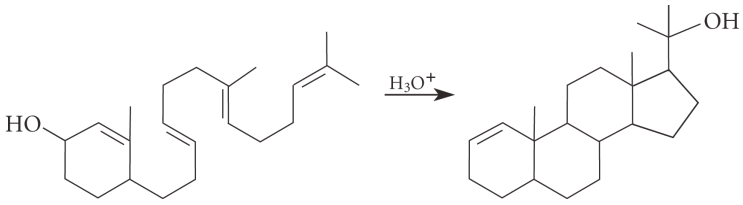
†p. 781 The problem number for Problem 16.36 should be boldface color. (It is solved in the Study Guide–Solutions Manual.)

†p. 781 The problem below Problem 16.39 should be numbered 16.40, not 16.38.

Chapter 17

†p. 798 The part number (c) of Problem 17.6(c) should not be blue boldface. (The answer is not in the Study Guide and Solutions Manual.)

†p. 819 In Problem 17.38(e), the product is missing a methyl group at the rightmost ring junction. (It is correct in the Solutions Manual.)



Chapter 18

p. 825 The last sentence on p. 825 should be omitted and replaced with the following: (See Problem 18.76 on p. 885.)

†p. 832 In Fig. 18.3, the first element in Period 6 should be Lu, not La.

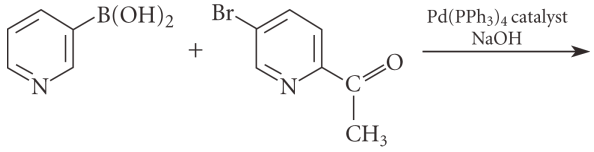
†p. 848 In the first line of Section B, the name Miyaura is misspelled.

p. 849 In Eq. 18.48, the name of the last structure is (*Z*)-1-methoxy-4-(1-propenyl)benzene.

p. 852 In Eq. 18.53, in the name of the product, the numbers for the hydroxy and methoxy groups within the parentheses should be switched to read (3-hydroxy-4-methoxyphenyl).

†p. 874 In Problem 18.41, the last word in the line should be ethynyltrimethylstannane.

†p. 882 In Figure P18.65(e), a bromine is missing in the second reactant. The equation should read as follows:



p. 886 The name of the compound in Problem 18.85 (in both the text and the caption) is Citalopram.

†p. 887 In Problem 18.83, the second alkyne starting material should be 1-pentyne, not 1-hexyne. Also, the word "synthesis" below the structure should be one word.

Chapter 19

†p. 923 The cross-reference at the beginning of line 2 should be to Problem 19.18(b), not 19.16(b).

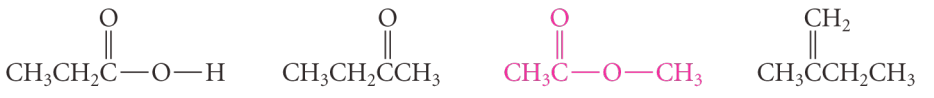
Chapter 20

†p. 966 In Eq. 20.18b, delete the unshared pair over the hydrogen in the last structure.

†p. 984 Part (b) of Problem 20.53 should read: "Give the structure of an isomer of compound *A* that has a different melting point from *A* and NMR spectra that are almost identical to those of *A*." (The specific melting point given, although correct, has no utility in solving the problem without a comparison to that of *A*.)

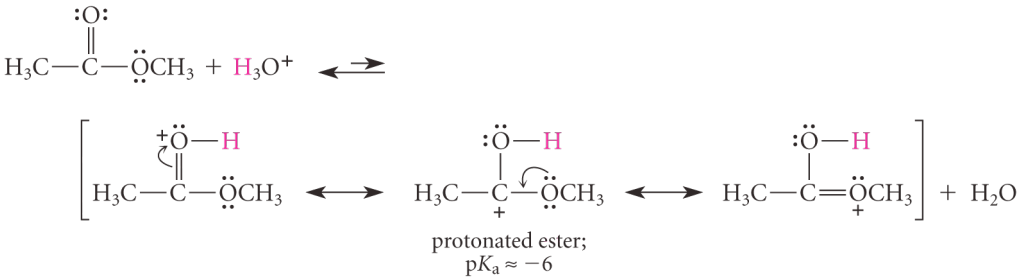
Chapter 21

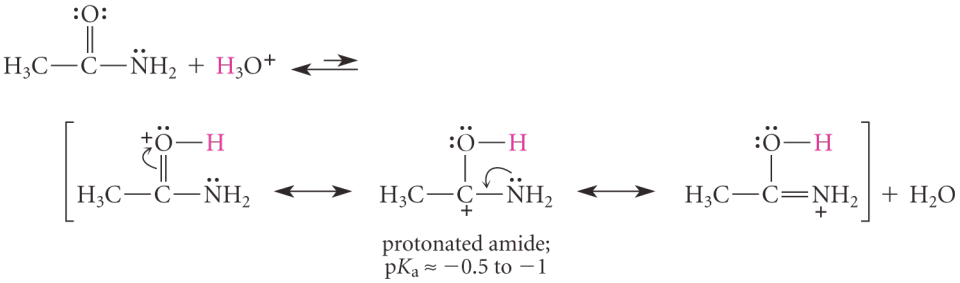
†p. 994 In the first display (Sec. 21.3A), the structure of 2-butanone has one too many CH_2 groups.



	propionic acid	**2-butanone**	**methyl acetate**	**2-methyl-1-butene**
boiling point	141 °C	80 °C	57 °C	31.2 °C

†p. 1001 The second of the resonance structures in both Eq. 21.4a and Eq. 21.4b are incorrect. The corrected equations are as follows:





†p. 1009 In Eq. 21.20b, the nitrogen in the structure captioned "an imidic acid" should have an unshared pair.

†p. 1041 In Fig. P21.50, none of the part numbers should be boldface color, because none of these are answered in the Study Guide and Solutions Manual. (The part numbers are correct in Problem 21.50 on p. 1040.)

*p. 1044 In Problem 21.55, the sub-part designation **(a)** is missing. It goes to the upper left of the first structure, aligned vertically with the (b) below it. It should be bold-face color.

Chapter 22

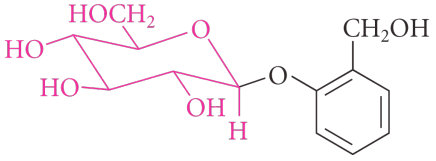
p. 1101 Problem 22.44 should be numbered Problem 22.46.

Chapter 23

p. 1125 In the last line of the second-to-last paragraph, the cross-reference to Eq. 23.7 should be to Eq. 23.6.

Chapter 24

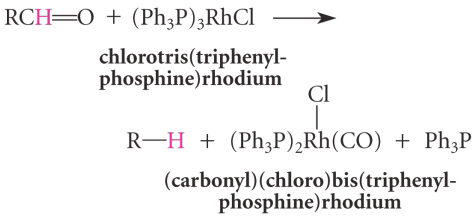
p. 1190 In Fig. 24.4, the stereochemistry is wrong at carbon-3 of the sugar group in salicin; the structure should be as follows:



salicin
(from extract of willow bark)

†p. 1193 The Problems 24.17 and 24.18 were inadvertently numbered 27.17 and 27.18.

†p. 1216 The reaction in Problem 24.47 should be changed as follows:



In the same problem, the catalyst name chlorotris(triphenylphosphine)rhodium should be a single word.

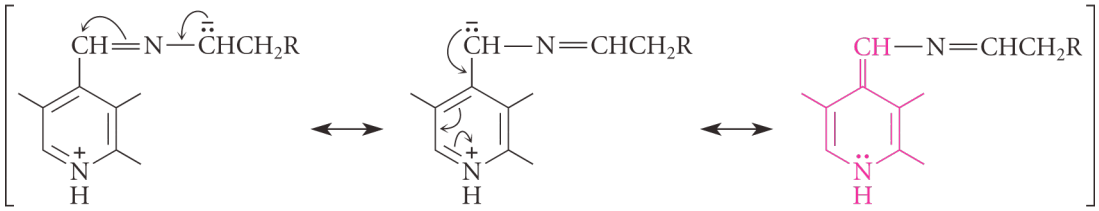
Chapter 25

†p. 1224 Add a close parenthesis at the end of the second-to-last paragraph.

†p. 1225 Equation 25.8 in Study Problem 25.1 is cut off on the right, so that the final H_2O looks like H_2C. It should be H_2O.

†p. 1225 In the last line of Study Problem 25.1, change "conjugate-base" to "conjugate-acid." The sentence then should read: "Imidazole is more basic than pyridine because of the resonance stabilization of its conjugate-acid cation."

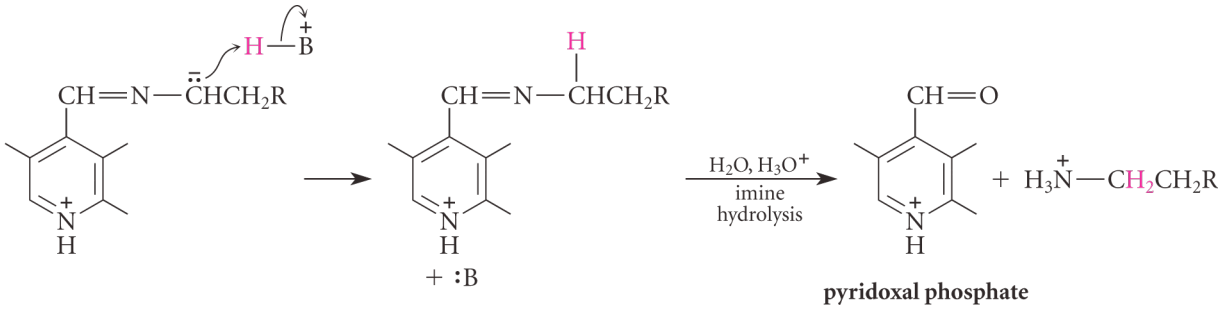
†p. 1243 In Eq. 25.56b, replace the CO_2^- groups with H. (This equation shows the resonance structures of the product of Eq. 25.56a.)



three of the many resonance structures for the carbanion intermediate

†p. 1243 Prior to the last paragraph ("Given how important…"), add the following missing paragraph and equation, to be numbered (25.56c).

Protonation of this anion and hydrolysis of the resulting imine gives pyridoxal phosphate and the product of Eq. 25.51. ($^+$B—H and B**:** are acidic and basic groups in the enzyme active site.)



(25.56c)

Chapter 26

†p. 1297 In Fig. 26.4, the number "30" should be over the Cys residue, not the Val residue.

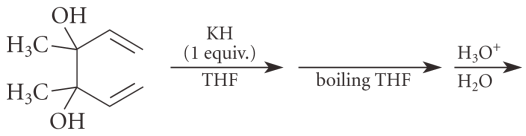
†p. 1303 In Problem 26.25(b), an additional sentence is required: "All y-type fragments contain a protonated terminal amino group, that is, H_3N^+—."

†p. 1325 In Problem 26.46, the approximate mass of the peptide should be changed from 1100 to 1000.

†p. 1332 In Problem 26.74, change the Asp_{35} to Glu_{35}. There are two of these: the first is in the sixth line of the second column, and the second is in the 4th line of part (a), also in the second column. Note that Asp_{52} is correct and should not be changed.

Chapter 27

†p. 1369 In the reaction of Problem 27.33d, add a protonolysis step, as follows:



Additions and Corrections to the Index

*p. I-11 Add, under the level-1 entry "Chlorine", the level-2 entry "chlorination of alkanes, 365–366". It goes just after the level-2 entry "α-chlorination …"

*p. I-19 Add under the level-1 entry "Free radicals," and under the level-2 entry "intermediates," the level-3 entry "in alkane halogenation, 365–366". It should be the first level-3 entry.

*p. I-20 Add under the level-1 entry "Halogenation," and just above the level-2 entry "of benzene," the level-2 entry "of alkanes, free-radical, 365–366".

*p. I-24 Add the level-1 entry, "Lithium, in preparation of organolithium reagents, 362". This should follow the level-1 entry "Lipids" at the bottom of the second column.

p. I-33 The page reference for "Sawhorse projections" should be **257**, not **258.**

*p. I-24 Add the level-1 entry, “Magnesium, in preparation of Grignard reagents, 361–362”. This should follow the level-1 entry “Magic acid” at the end of the page.

*p. I-25 Add under the level-1 entry “Methane,” the level-2 entry “chlorination, free-radical, 365–366”. This should follow the level-2 entry, “biological sources.”

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